Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

Claim 1 (currently amended): A method of treating vulnerable plaque at a site in a vessel, comprising:

identifying a vulnerable plaque site for treatment;

introducing a radiation source into a vessel containing a vulnerable plaque site identified for treatment;

guiding the radiation source to a position adjacent to the vulnerable plaque site identified for treatment; and

delivering a therapeutically effective dose of radiation to the vulnerable plaque site identified for treatment, wherein a retractable shield surrounds the radiation source when the vessel is not being treated.

Claim 2 (original): The method of claim 1 wherein the radiation source is selected from a group consisting of a radioactive wire, a radioactive strip, a radioactive pellet, a radioactive stent, a receptacle or lumen that contains radioactive material, a receptacle or lumen that receives radioactive material, a receptacle or lumen that is coated with radioactive material, and a device for delivering x-ray radiation.

Claim 3 (cancelled).

Claim 4 (original): The method of claim 1 further comprising:

first making a percutaneous access site into one of a vessel to be treated or a vessel that leads to a vessel to be treated and advancing a guiding catheter through the percutaneous access site to the vulnerable plaque site identified for treatment.

Claim 5 (original): The method of claim 4 wherein the guiding catheter includes a guide wire at least partially enclosed by the guiding catheter.

Claim 6 (original): The method of claim 5 wherein the radiation source is introduced over the guide wire.

Claim 7 (original): The method of claim 5 wherein the guide wire is withdrawn prior to introducing the radiation source.

Claim 8 (original): The method of claim 4 wherein the guiding catheter includes at least one expandable structure adjacent a distal end of the catheter.

Claim 9 (original): The method of claim 8 wherein the expandable structure is a balloon.

Claim 10 (original): The method of claim 8 wherein the expandable structure is expanded prior to delivering a therapeutically effective dose of radiation to the vulnerable plaque site identified for treatment.

Claim 11 (original): The method of claim 10 wherein the expanded structure is in contact with the vessel to be treated at a location adjacent and distal to the vulnerable plaque site identified for treatment.

Claim 12 (original): The method of claim 10 wherein the expanded structure centers the guiding catheter within the vessel to be treated.

Claim 13 (original): The method of claim 10 wherein the expanded structure shields the vessel to be treated from radiation exposure distal to the vulnerable plaque site identified for treatment.

Claim 14 (original): The method of claim 10 wherein the expandable structure is returned to an unexpanded state after a therapeutically effective dose of radiation has been delivered to the vulnerable plaque site identified for treatment.

Claim 15 (original): The method of claim 1 wherein the radiation source comprises at least one element of a radiation treatment device.

Claim 16 (original): The method of claim 15 wherein the radiation treatment device includes at least one expandable structure.

Claim 17 (original): The method of claim 16 wherein the expandable structure is expanded prior to delivering a therapeutically effective dose of radiation to the vulnerable plaque site identified for treatment.

Claim 18 (original): The method of claim 16 wherein the expandable structure is a balloon.

Claim 19 (original): The method of claim 16 wherein the expandable structure shields the vessel to be treated from radiation exposure beyond the vulnerable plaque site identified for treatment.

Claim 20 (original): The method of claim 16 wherein the expandable structure is returned to an unexpanded state after a therapeutically effective dose of radiation has been delivered to the vulnerable plaque site identified for treatment.

Claim 21 (original): The method of claim 16 wherein the expandable structure is adjacent to a proximal end of the radiation source.

Claim 22 (original): The method of claim 21 wherein the expandable structure is positioned within the vessel to be treated at a location adjacent and proximal to the vulnerable plaque site identified for treatment.

Claim 23 (original): The method of claim 16 wherein the expandable structure is adjacent to a distal end of the radiation source.

Claim 24 (original): The method of claim 23 wherein the expandable structure is positioned within the vessel to be treated at a location adjacent and distal to the vulnerable plaque site identified for treatment.

Claim 25 (original): The method of claim 16 wherein at least one expandable structure is adjacent to a distal end of the radiation source and at least one expandable structure is adjacent to a proximal end of the radiation source.

Claim 26 (original): The method of claim 25 wherein at least one expandable structure is positioned within the vessel to be treated at a location adjacent and distal to the vulnerable plaque site identified for treatment and at least one expandable structure is positioned within the vessel to be treated at a location adjacent and proximal to the vulnerable plaque site identified for treatment.

Claim 27 (original): The method of claim 1 wherein delivering a therapeutically effective dose of radiation to the vulnerable plaque site identified for treatment comprises positioning the radiation source at the vulnerable plaque site and exposing the vessel to radiation while the device is stationary.

Claim 28 (original): The method of claim 1 wherein delivering a therapeutically effective dose of radiation to the vulnerable plaque site identified for treatment comprises positioning the radiation source at a point adjacent a distal edge of the vulnerable plaque site and exposing the vessel to radiation while the device is moved axially to treat the entire area of plaque.

Claim 29 (original): The method of claim 1 further comprising:

withdrawing the radiation source from the vessel after a therapeutically effective dose of radiation has been delivered to the vulnerable plaque site identified for treatment.

Claim 30 (cancelled).

Claim 31 (cancelled).

Claim 32 (cancelled).

Claim 33 (new): A method of treating vulnerable plaque at a site in a vessel, comprising:

identifying a vulnerable plaque site for treatment;

advancing a guiding catheter to the vulnerable plaque site identified for treatment, the guiding catheter having at least one expandable structure adjacent a distal end of the catheter;

introducing a radiation source into a vessel containing a vulnerable plaque site identified for treatment;

guiding the radiation source to a position adjacent to the vulnerable plaque site identified for treatment;

expanding the expandable structure; and

delivering a therapeutically effective dose of radiation to the vulnerable plaque site identified for treatment, wherein the expanded structure shields the vessel to be treated from radiation exposure distal to the vulnerable plaque site identified for treatment.

Claim 34 (new): A method of treating vulnerable plaque at a site in a vessel, comprising:

identifying a vulnerable plaque site for treatment;

advancing a guiding catheter to the vulnerable plaque site identified for treatment;

introducing a radiation source into a vessel containing a vulnerable plaque site identified for treatment, the radiation source comprising at least one element of a radiation treatment device, the radiation treatment device including at least one expandable structure;

guiding the radiation source to a position adjacent to the vulnerable plaque site identified for treatment;

expanding the expandable structure; and

delivering a therapeutically effective dose of radiation to the vulnerable plaque site identified for treatment, wherein the expanded structure shields the vessel to be treated from radiation exposure beyond the vulnerable plaque site identified for treatment.